

Welcome to AP Biology!

Mrs. Leanne Petrov Room 234 Email: Lpetrov@nasd.k12.pa.us

Class website: www.nahsapbio.wikispaces.com

General Course Information

AP Biology is a rigorous course which aims to challenge students to form questions about living things and their life processes. The course is designed to be aligned with an introductory college biology course.

Students will be exposed to approximately 30% laboratory time and 70% teacher lecture alongside class activities and research. Due to the rapid movement through course material and numerous laboratories, **attendance is key** to succeeding in this course.

The AP Biology exam serves as a test of general biology content knowledge. All students are required to take the exam in May and complete practice exam questions throughout the year.

Successful completion of this course relays your determination to pursue a career in biological sciences, which is something colleges take into consideration. Additionally, a profficient exam score may exempt you from taking introductory biology courses which can allow students to begin taking higher level courses their freshman year in college.

AP Biology Exam

Section Information: Item Types & Weight

Multiple Choice + Grid-ins
(50% of exam weight)

Question Types and Distribution

63 multiple choice
5 grid-in questions
Students will bubble in numerated answer)

Timing

90m

Free Response Section – 90 minutes

Free Response
(50% of exam weight)

2 long free-response

20-25min per question

6 short free-response

3-10 min per question

GRADING

MARKING PERIOD		OVERALL	
Exams	40%	1 st MP	22.5%
Lab Reports	20%	2 nd MP	22.5%
Lab Work	20%	Midterm	10%
Performance Assessments (Classwork, Homework)	20%	3 rd MP	22.5%
		4 th MP	22.5%

1. Tests & Quizzes

- a. AP Exam Style Questions – Multiple Choice, Calculations & Free Response
- b. The best way to perform well is to be present in class **daily** for authentic practice with the instructor & classmates.
- c. All exams & quizzes missed must be completed within the same number of days missed. You will also be given an alternate version of the exam which may be of a different style to conserve test security.

2. Labs & Reports

- a. Grades will come from both a written report and lab performance. Rubrics for each individual lab will be provided.
- b. Pre-lab work must be submitted on date specified or you will lose 10% on your report grade & a zero for the pre-lab grade.
- c. A lab outline must be maintained and will be collected marking periods 1-3.
- d. There are at least 3 labs each marking period. If you are absent, you will have 1 week to make up the lab or you will receive a zero for the lab grade & report grade.
- e. Some labs cannot be made up and you will be required to perform an alternate assignment to assess the same concepts.

3. Performance Assessments

- a. Miscellaneous class handouts & activities will be assigned but not graded on accuracy since they are practice.
- b. Class discussions & participation in practice questions will be graded based on efforts & behavior.
- c. Refusal to participate, sleeping, any behavior that distracts teaching & learning, or any absence from class without a legitimate pass provided to the teacher will result in a zero.

There is no extra credit in this course, no exceptions.

Course Materials

1. **Textbook**: Available in Library. **Bring to class only as shown on calendar**

Campbell Biology, 9th Edition or use e-text version, codes available on course website listed above.
2. **Binder with Lined Paper**: Complete pre-lab work & lab notebook entries. **Bring on pre-lab & regular lab days as shown on calendar.** You will only submit the papers as needed (NOT the binder) so it may be used to keep other class documents.
3. **Notes**: Teacher generated note outlines given in class. **Bring everyday**
4. **Homework Notebook**: Read notes & record key points/questions you have in an outline format for the notes which will be discussed the following class, as shown on the calendar. Attempt the practice questions shown in notes & record answers/questions about them. This must be a notebook devoted solely for this course. **Bring everyday.**
5. **Labs**: Teacher generated protocols given in class. **Bring on pre-lab & regular lab days as shown on calendar.**
6. A course **calendar** will be provided each month, you are responsible for reviewing this and planning accordingly for any absences.
7. A **formula sheet** will be provided & used on a regular basis. **Bring everyday**

Course Outline

UNIT ONE: Evolution

- Mechanisms of Evolution
 - LAB 1 – FINCH EVOLUTION
 - LAB 2 – HARDY WEINBERG SIMULATION
- Phylogenetics & Speciation
- Evidence for Common Descent
- UNIT 1 EXAM

UNIT TWO: Uses of Energy & Materials by Organisms

- Thermodynamics & Organisms
- Energy Transformations I: Cellular Respiration
 - LAB 3 – CELLULAR RESPIRATION
- Energy Transformations II: Photosynthesis
 - LAB 4 – PLANT PIGMENTS
 - LAB 5 – PHOTOSYNTHESIS
- UNIT 2.1 EXAM
- Cellular Transport Mechanisms
 - LAB 6 – PASSIVE TRANSPORT
- Matter Cycles & Uses of Matter in Organisms
- UNIT 2.2 QUIZ
- Homeostasis in Animals
 - LAB 7 – CRICKET BEHAVIOR
- Homeostasis in Plants
- UNIT 2.2 & 2.3 EXAM

UNIT THREE: Storage of, Retrieval of & Response to Information

- DNA Structure & Function
- Protein Synthesis
- Genome Changes
 - LAB 8 – BACTERIAL TRANSFORMATION
- Biotechnology Methods
 - LAB 9 – DNA ANALYSIS
- MIDTERM (Unit 1 - Unit 3.1)
- Cell Cycle & Division
 - LAB 10 – CELL DIVISION
- Patterns of Inheritance: Genetics Problem Analyses
- UNIT 3.2 EXAM
- Gene Regulation Strategies

- Cell Communication Strategies
- Nerve Signaling
- UNIT 3.3 EXAM

UNIT FOUR: Interactions within Biological Systems

- Biomolecule Interactions
 - LAB 11 - ENZYMES
- UNIT 4.1 QUIZ
- Organ & Organ System Interactions
 - LAB 12 – PLANT STRUCTURE & FUNCTION
- Population Dynamics
- Ecosystem Dynamics
 - LAB 13 – ECOSYSTEM PRODUCTIVITY
- Community Changes & Responses

AP Exam Review – Approx. 2 weeks

Practice AP Exam – Score is worth 40% of MP4 grade; opportunities to improve score will be provided by attending additional after/before school review sessions.

AP Exam – 2nd week in May.

Independent Labs & Presentations will occur for the remainder of the course.

Course Contract

1. Success in this course is directly correlated to attendance in class. The student must assume responsibility for **obtaining and completing missed assignments within the same number of days they were absent or no credit will be received.**
2. Students must committ to **participate fully in all class activities** (or an appropriate alternative if requested by a parent/guardian). All assignments are available for viewing on the course website and the course calendar provided to students shows the dates of all assignments. **If an alternate assignment is needed, I must receive notice 1 week in advance to the activity to plan an appropriate alternative.**
3. Refusal to participate, sleeping, any behavior that distracts teaching & learning, or **any absence from class without a legitimate pass provided to the teacher will result in an automatic zero for the day's activities. IT IS YOUR RESPONSIBILITY TO PRESENT AN EXCUSAL NOTE FOR ABSENCES/MISSED CLASSES TO ME OR YOU WILL RECEIVE A ZERO FOR MISSED WORK.**
4. Students struggling with exams, content or any assignment **must reach out for help prior to the end of that topic.** I am available every day after school until 2:45PM and can stay until 4:00PM with 1 day notice. I can also be reached via email for questions and usually respond within 1 hour between 7:00AM and 8:00PM.
5. Many homework assignments will be **optional**. The optional assignments serve as reinforcement of content but I understand students may not have time to complete every assignment given; therefore, while I *recommend* all assignments be completed, I do offer many assignments as optional.

The information in this document has been read and discussed by the student and parents/guardians and we agree to the terms within the document.

Student Signature: _____

Parent/Guardian Signature: _____

Date: _____

Please sign this page and submit to Mrs. Petrov within the first week of school. I will return a photocopy of the signed contract to you the following week.